IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application: He et al.	)	Group Art Unit: 1713
	)	
Serial No. 10/779,420	)	Examiner: Peter D. Mulcahy
	)	
Filed: February 13, 2004	)	Atty. Docket No. 3073.NWN
	)	

For: Adhesive Containing Radial Block Copolymer

BRIEF ON APPEAL

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

Appellants hereby appeal the decision of the Primary Examiner finally rejecting claims 1-4, 6-9, 11-14, 16 and 17.

A copy of the claims involved in this appeal is set forth in the *Claims appendix*.

(i) *Real party in interest*

The real party in interest is Henkel AG & Co. KGaA.

(ii) *Related appeals and interferences*

The Board is directed to the appeals relating to copending commonly assigned application Serial Nos. 10/779,492 and 10/ 779,505, as listed in the *Related proceedings appendix*.

(iii) *Status of Claims*

Claims 1-4, 6-9, 11-14, 16 and 17 are pending.

Claims 5, 10 and 15 have been canceled.

Claims 1-4, 6-9, 11-14 and 16 are provisional rejected as being unpatentably obviousness

over claims 1-4, 6-9, 11-14 and 16 of copending application Serial No. 10/779,492 and over claims 1-4 and 6-12 of copending application Serial No. 10/779,505.

Claims 1-4 , 6-9, 11-14, 16 and 17 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Komatsuzaki et al. (U.S. 6,534,593) or Vaughan et al. (U.S. 6,531,544) or Kueppers (U.S. 5,939,483) or Diehl et al. (U.S. 5,292,819) or Asahara et al. (U.S. 5,532,319).

Claims 1-4, 6-9, 11-14 and 16 are rejected under 35 U.S.C. § 112, first paragraph.

The rejections of claims 1-4, 6-9, 11-14, 16 and 17 are being appealed.

(iv) *Status of Amendments*

All amendments have been entered.

(v) *Summary of claimed subject matter*

Independent claim 1 is directed to a hot melt adhesive. The adhesive comprises, as required componets, (i) a radial block copolymer component comprising $(PS\text{-}PI\text{-}PB)_nX$ wherein PS is polystyrene, PI is polyisoprene and PB is polybutadiene, X is the residue of a multifunctional coupling agent used in the production of the radial block copolymer, and n is equal to or greater than 3 and represents the number of PS-PI-PB arms appended to X, and wherein the styrene content of the radial block copolymer is from 25 wt % to about 50 wt %, (ii) a linear triblock copolymer, (iii) a tackifying resin, and (iv) a liquid plasticizer. The adhesive may also, optionally comprise a wax component. Based on the weight of the adhesive composition, the radial block copolymer component is present in amounts of less than 15 wt %, the linear triblock copolymer is present in amounts of up to about 20 wt %, the tackifying resin is present in amounts of from about 30 to about 70 wt %, the plasticizer is present in amounts of

less than about 20 wt % and the wax is present in amounts of 0 wt % up to about 5 wt %. The adhesive must be suitable for use as an elastic attachment adhesive. Page 3, lines 6-10, 13-17, and 25-26; page 4, lines 1-3 and 2-13; page 5, lines 10-11; page 6, lines 26-28 to page 7, lines 1; and page 7, lines 12-13.

(vi) *Grounds of rejection to be reviewed on appeal*

A. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14 AND 16 ARE PATENTABLY DISTINCT OVER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14 AND 16 OF COPENDING APPLICATION SERIAL NO. 10/779,492 AND OVER CLAIMS 1-4 AND 6-12 OF COPENDING APPLICATION SERIAL NO. 10/779,505.

B. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4 , 6-9, 11-14, 16 AND 17 ARE UNPATENTABLY OBVIOUS OVER KOMATSUZAKI ET AL. (U.S. 6,534,593) OR VAUGHAN ET AL. (U.S. 6,531,544) OR KUEPPERS (U.S. 5,939,483) OR DIEHL ET AL. (U.S. 5,292,819) OR ASAHARA ET AL. (U.S. 5,532,319).

(B1) WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14, 16 AND 17 IS UNPATENTABLY OBVIOUS OVER KOMATSUZAKI ET AL.

(B2) WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14, 16 AND 17 IS UNPATENTABLY OBVIOUS OVER VAUGHAN ET AL.

(B3) WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14, 16 AND 17 IS UNPATENTABLY OBVIOUS OVER KUEPPERS

(B4) WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14, 16 AND 17 IS UNPATENTABLY OBVIOUS OVER DIEHL ET AL.

(B5) WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14, 16 AND 17 IS UNPATENTABLY OBVIOUS OVER ASAHARA ET AL.

C. WHETHER THE SUBJECT MATTER OF CLAIMS 1-4, 6-9, 11-14 AND 16 ARE SUPPORTED BY AN ENABLING DISCLOSURE.

(vii) *Argument*

A. Claims 1-4, 6-9, 11-14 and 16 are patentably distinct over the subject matter of claims 1-4, 6-9, 11-14 and 16 of copending application Serial No. 10/779,492 and over claims 1-4

and 6-12 of copending application Serial No. 10/779,505.

Claims 1-4, 6-9, 11-14 and 16 are provisional rejected as being unpatentable obviousness over claims 1-4, 6-9, 11-14 and 16 of copending application Serial No. 10/779,492 and over claims 1-4 and 6-12 of copending application Serial No. 10/779,505. This is a nonstatutory obviousness-type double patenting rejection.

The examiner urges that the scope of the claims overlap, and that the use or omission of components conventionally used in art render the claims obvious to one skilled in the art.

Appellants disagree.

The claims of the subject application are directed to adhesive formulations containing a radial block copolymer $(PS\text{-}PI\text{-}PB)_nX$ in amounts of less than 15 wt %.

In contrast, the claims of the application Serial No. 10/779,492 are directed adhesive compositions containing a radial block copolymer $(PS\text{-}PI)_nX$ in amounts of less than about 15 wt %, and the claims of application Serial No. 10/ 779,505 are directed to adhesive compositions containing a radial block copolymer $(PS\text{-}PI\text{-}PB)_nX$ in amounts from 15 wt % to about 35 wt %.

Clearly, no overlap exists.

Clearly, the claims of the subject application are not obvious variations of the invention claimed in application Serial Nos. 10/779,492 and 10/ 779,505.

In determining whether a nonstatutory basis exists for a double patenting rejection, the first question to be asked is: "Does any claim in the application define an invention that is merely an obvious variation of an invention claimed in the patent?" If the answer, as here, is no, then an obviousness double patent rejection is not appropriate.

Appellants submit that the claims of the subject application are not obvious variations of the invention claimed in application Serial Nos. 10/779,492 or 10/ 779,505 and that the obviousness type double patenting rejection is improper.

The Board is requested to reverse the examiner's nonstatutory obviousness-type double patenting rejection.

B. Claims 1-4, 6-9, 11-14, 16 and 17 are patentable over each of Komatsuzaki et al. (U.S. 6,534,593), Vaughan et al. (U.S. 6,531,544), Kueppers (U.S. 5,939,483), Diehl et al. (U.S. 5,292,819) and Asahara et al. (U.S. 5,532,319).

Claims 1-4 , 6-9, 11-14, 16 and 17 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Komatsuzaki et al. (U.S. 6,534,593) or Vaughan et al. (U.S. 6,531,544) or Kueppers (U.S. 5,939,483) or Diehl et al. (U.S. 5,292,819) or Asahaa et al. (U.S. 5,532,319).

(b1). Claims 1-4, 6-9, 11-14, 16 and 17 are patentable over Komatsuzaki et al.

Komatsuzaki et al. disclose block copolymer compositions used as a pressure sensitive ingredient in pressure sensitive adhesives. As described in col. 3, lines 39-43, the styrene content is in the range of 5 to 24% by weight, more preferably 10-18 % by weight, and more preferable 11 to 14 % by weight. As described in the paragraph bridging cols. 3 and 4, see, in particular, col. 4, lines 3-5, unduly high levels of styrene will result in loss of tack. From the information set forth in col. 11, lines 7-11, it can be seen that the percent of SIS used in the formulation of Komatsuzaki et al. is from 16.7 to 90.9 %. The pressure sensitive hot melt adhesive of Komatsuzaki et al. is used for the production of various pressure sensitive adhesive tapes, labels, deducting rollers and the like.

The adhesive claimed by appellants does not require pressure sensitive properties.

Appellants' claimed adhesive comprises a $(PS\text{-}PI\text{-}PB)_nX$ radial block copolymer which is present in the adhesive in amounts of less than 15 wt %. The radial block copolymer required for use in the practice of appellants' invention has a styrene content of from 25 wt % to about 50 wt %. Such a high level of styrene will lead to a high modulus which is not useful in pressure sensitive adhesives. There is no disclosure or suggestion in the Komatsuzaki et al. patent that would motivate the skilled artisan modify the formulation Komatsuzaki et al. for use in the manufacture of disposable absorbent articles, let alone disposable elastic articles, which require high creep resistance. The pressure sensitive adhesives of Komatsuzaki et al. would not be useful as an elastic attachment adhesive in non woven applications.

Appellants submit that the claimed subject matter is not obvious over Komatsuzaki et al.

Reversal of the examiner's rejection of the claims 1-4, 6-9, 11-14, 16 and 17 as being obvious over Komatsuzaki et al. is requested.

(b2). Claims 1-4, 6-9, 11-14, 16 and 17 are patentable over Vaughan et al.

Vaughan et al. disclose hot melt adhesives that can be used in the manufacture of disposable absorbent articles and which is in contact with an oil-based skin care ingredient. I.e., the adhesive is used to bond substrates that contain or are coated with oil-based ingredients. The adhesives of Vaughan et al. is described as containing 15 to 45 wt % of a block copolymer, 50 to 80 wt % of a tackifier and 0 to 10 wt % of a plasticizer. The block copolymer is preferably used in amounts greater than about 20 wt %, has a styrene content of less that 30 wt %, more preferably less that 20, even more preferably less than 15 wt % (col. 4, lines 8-10) and contains a diblock content of at least about 20 wt %, more preferably a least about 30 wt % (col. 2, line 22,

and col. 4 lines13-16). The higher diblock percentage in the block copolymer is more preferable than the lower di-block, which is inapposite of appellants' invention. Again, appellants' claimed adhesive comprises a $(PS\text{-}PI\text{-}PB)_nX$ radial block copolymer which is present in the adhesive in amounts of less than 15 wt %. The radial block copolymer required for use in the practice of appellants' invention has a styrene content of from 25 wt % to about 50 wt %.

Appellants submit that the claimed subject matter is not obvious over Vaughan et al.

Reversal of the examiner's rejection of the claims 1-4, 6-9, 11-14, 16 and 17 as being obvious over Vaughan et al. is requested.

(b3) Claims 1-4, 6-9, 11-14, 16 and 17 are patentable over Kueppers.

Kueppers describes an adhesive used in packaging applications. The viscosity of the Kueppers adhesive, typically less than about 1500 cps at about 150°C, would not be useful as an elastic attachment adhesive and would not render obvious the subject matter claimed by appellants. See Table 1 (col. 10) of Kueppers, in which the adhesive examples are reported to have viscosities ranging from 1100 to 1470 cPs at 150°C. In contrast, appellants' formulation set forth in Table 1 (page 13 of appellants' specification) shows a viscosity at 300°F (150°C) of 4200 cPs. The examiner has not pointed to any disclosure that would motivate the skilled artisan to make the adhesive claimed by appellants.

The claimed invention is not obvious over Kueppers.

Reversal of the examiner's rejection of the claims 1-4, 6-9, 11-14, 16 and 17 as being obvious over Kueppers is requested.

(b4). Claims 1-4, 6-9, 11-14, 16 and 17 are patentable over Diehl et al.

Diehl et al. fail to disclose the presence of a linear triblock copolymer, and the examiner fails to provide evidence that linear triblock copolymers would be a by-product present in the manufactured radial block copolymer.

Appellants submit that the claimed subject matter is not obvious over Diehl et al.

Reversal of the examiner's rejection of the claims 1-4, 6-9, 11-14, 16 and 17 as being obvious over Diehl is requested.

(b5). Claims 1-4, 6-9, 11-14, 16 and 17 are patentable over Asahara et al. (U.S. 5,532,319).

Asahara discloses block copolymer compositions having specific combinations and types of block copolymers and pressure sensitive adhesive prepared using the block copolymer compositions of the invention as the base polymer component of the adhesive. The block copolymer compositions are formulated for pressure sensitive applications and comprise 20-90 wt % of a of a $(S\text{-}B\text{-}I)_n\text{-}X$ and/or $(S\text{-}I\text{-}B)_n\text{-}X$ block copolymer where n=2, 3 or 4 and from 80-10 of a SBI or SIB diblock. While Asahara discloses compositions that contain $(S\text{-}B\text{-}I)_n\text{-}X$ wherein x is 2-4, there is no exemplification, or even a general disclosure of the use of any polymer composition comprising $(S\text{-}B\text{-}I)_3\text{-}X$ let alone in amounts of less that 15 wt %. There is no disclosure of use of less than wt % of $(S\text{-}B\text{-}I)_3\text{-}X$ with not more that about 20 wt % of a linear triblock as disclosed and claimed by appellants. A polymer of the type disclosed for use in appellants' claimed hot melt adhesive is not disclosed by Asahara.

Appellants submit that the claimed subject matter is not obvious over Asahara.

Reversal of the examiner's rejection of the claims 1-4, 6-9, 11-14, 16 and 17 as being obvious over Asahara is requested.

C. Claims 1-4, 6-9, 11-14 and 16 are supported by an enabling disclosure.

Claims 1-4, 6-9, 11-14 and 16 are rejected under 35 U.S.C. § 112, first paragraph.

The claims have also been rejected under 35 U.S.C. § 112, first paragraph. It is the examiner's position that the claims require no radial block copolymer. Appellants disagree. The claims require a radial block copolymer, a linear triblock copolymer and a liquid plastisizer. The claim then further limit that these components are present in not more than the recited amounts.

Clearly the specification provides support for the claimed subject matter.

Reversal of the examiner's rejection Section 112, first paragraph rejection is requested.

Respectfully submitted,

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(viii) *Claims appendix*

1. A hot melt adhesive comprising

a radial block copolymer component comprising $(PS\text{-}PI\text{-}PB)_nX$ wherein PS is polystyrene, PI is polyisoprene and PB is polybutadiene, X is the residue of a multifunctional coupling agent used in the production of the radial block copolymer, and n is equal to or greater than 3 and represents the number of PS-PI-PB arms appended to X, and wherein the styrene content of the radial block copolymer is from 25 wt % to about 50 wt % .

a linear triblock copolymer,

a tackifying resin,

a liquid plasticizer, and,

optionally, a wax,

wherein, based on the weight of the adhesive composition, the said radial block copolymer component is present in amounts of less than 15 wt %, the linear triblock copolymer is present in amounts of up to about 20 wt %, the tackifying resin is present in amounts of from about 30 to about 70 wt %, the plasticizer is present in amounts of les than about 20 wt % and the wax is present in amounts of 0 wt % up to about 5 wt %,

said adhesive being suitable for use as an elastic attachment adhesive.

2. The adhesive of claim 1 in which the number average molecular weight of each arm of said radial block copolymer is from about 30,000 to about 95,000.

3. The adhesive of claim 2 wherein the radial block copolymer component has a SIB percentage of less than about 25%, based on the amount of the radial block copolymer component.

4. The adhesive of claim 3 wherein the radial block copolymer component has a SIB percentage of less than about 20 %, based on the amount of the radial block copolymer component.

6. The adhesive of claim 1 wherein said linear triblock copolymer is styrene-isoprene-styrene, styrene-butadiene-styrene, styrene-isobutylene styrene, styrene-b-ethylene/butylene-b-stryrene, and/or styrene-b-ethylene/propylene-b-styrene.

7. The adhesive of claim 1 wherein n is between about 3 and about 6.

8. The adhesive of claim 1 which comprises both a liquid plasticizer and a wax.

9. An article of manufacture comprising an elastomeric fiber and the adhesive of claim 1.

11. The article of claim 9 which is a disposable elastic article.

12. The article of claim 11 which is a disposable absorbent elastic article.

13. The article of claim 12 which is a diaper.

14. A process for bonding a first substrate to a second substrate comprising applying to at least the first substrate the adhesive of claim 1, bringing at least the second substrate in contact with the adhesive present on the first substrate whereby said first and second substrates are bonded together, wherein at least one of said first substrate or said second substrate is an elastomeric polyurethane fiber.

16. The process of claim 14 wherein one of said first substrate or said second substrate is a nonwoven substrate.

17. The composition of claim 1 wherein said radial block copolymer component is present in amounts of from about 0.5 wt % to less than 15 wt %, the linear triblock copolymer is present in amounts of from about 1 wt % to about 20 wt %, the tackifying resin is present in amounts of from about 30 wt % to about 70 wt %, and the plasticizer is present in amounts of from about 1 wt % to about 20 wt %.

(ix) *Evidence appendix*

NONE

(x) *Related proceedings appendix*

A. Serial No. 10/779,492 (Attorney Docket No. 3074.NWN), filed February 13, 2004 in the names of Qiwei He and Michael G. Harwell. Assigned to Henkel AG & Co. KGaA.

B. Serial No. 10/779,505 (Attorney Docket No. 3075.NWN), filed February 13, 2004 in the names of Qiwei He and Michael G. Harwell. Assigned to Henkel AG & Co. KGaA.